

1 changes in tax laws or tax rates, and (4) regulatory, judicial, or legislative changes affecting the
2 costs of the Companies in North Carolina.

3 The pass-through works both ways, protecting the Companies from governmental actions that
4 would hurt it financially and enabling consumers to receive the benefits of governmental actions
5 that provide financial benefits.

6

7 Q. WHAT IS YOUR EVALUATION OF THE STIPULATED PLAN'S PROVISION FOR A
8 REVIEW AFTER FIVE YEARS?

9 A. The Stipulated Plan permits the Commission to review and revise the Plan after five years. The
10 Commission, operating in the public interest, thus assures consumers that changes in price,
11 efficiency and competitiveness not anticipated in the current plan can be incorporated in
12 subsequent plan modifications. I believe that this five-year review period strikes a good balance.
13 On the one hand, the period will be long enough to assure substantial incentives to improve
14 performance and to assure that only persistent differences between what has been anticipated and
15 what has occurred will elicit modifications. On the other hand, I believe that this period is short
16 enough to assure that changes not anticipated when the plan was devised can be incorporated in a
17 timely fashion.

18 In saying that, however, I reserve an important proviso—that revisions to the plan after the
19 five-year interval has elapsed are based upon data on industry-wide performance and not the
20 performance of the Companies or their parent corporation specifically. In its five-year review, the
21 Commission might be tempted to capture — in the form of subsequent rate reductions—
22 efficiency improvements which the Companies achieve over the first five-year period. If this
23 occurs, investors will not be provided an adequate opportunity to capture the profits associated
24 with these efficiency improvements, and, if implemented in this way, the potential incentive
25 benefits of the plan ultimately would be undermined. If, after review, the Companies' achieved
26 cost savings are simply passed on to consumers in the form of rate reductions, then price caps
27 will simply become rate of return regulation under another guise.

28 To avoid this outcome, the Commission should commit itself to limit the factors it will use to
29 modify the plan in subsequent reviews. Surely if evidence accumulates over the next five years
30 that general trends in industry productivity are faster than those embedded in the plan, it would be

1 appropriate to adjust subsequent price caps to reflect trends which might then be expected in the
2 future. It is not, however, appropriate to adjust for such trends retroactively nor is it appropriate
3 to judge these trends based on Carolina Telephone's and Centel's performance if this differs from
4 trends for the industry generally.

5 One clear signal that the Commission would intend to use the Companies' or their parent
6 corporation's own performance to revise the Plan after five years would be by embarking on a
7 traditional rate case before initiating price regulation now.

8

9 VI. OTHER WITNESSES' CRITICISMS OF THE PRICE REGULATION PLAN

10 Q. SEVERAL WITNESSES HAVE FILED CRITICISMS OF THE PLAN. CAN YOU
11 SUMMARIZE THE CRITICISMS TO WHICH YOU INTEND TO RESPOND?

12 A. Yes. In doing so, since the Stipulated Plan has superseded the Companies' original proposal, I
13 shall place my discussion in the context of the Stipulated Plan. But first I should note that there is
14 a surprising degree of consensus among the parties that revisions to the current pricing structure
15 along the basic outlines staked out in the Stipulated Plan are both necessary and desirable. Thus,
16 the witnesses for AT&T and MCI on which my comments principally focus tend to agree that
17 some form of price regulation plan represents a necessary response to competitive pressures and,
18 if well designed, can promote improvements in the efficiency of the telephone system.

19 The disagreements these parties have with the Plan center around three principal issues.
20 First, some of the parties argue that, before establishing the price regulation system, all rates
21 should be realigned with cost. Broadly speaking, there are two variants to this position. Some
22 parties argue that aggregate rates should be realigned with historic costs to assure that the initial
23 returns on the historic rate base are in line with the historic cost of capital. Others argue that initial
24 rates should be aligned with the incremental cost of service on a service by service basis. These
25 two positions are, of course, mutually inconsistent. More importantly, as I shall try to show
26 below, neither of these restrictions is necessary or desirable to assure a price cap plan which
27 operates in the public interest.

28 Second, several commenters have criticized the Companies' proposal as not incorporating
29 sufficient allowances for anticipated productivity improvements or for differences between the

1 trend in input prices for the telecommunications industry and the rest of the economy. I
2 understand that the Stipulated Plan provides for larger real price reductions than the Companies'
3 original proposal did, so the force of such criticisms has already been reduced; but I suspect that
4 the witnesses would claim that, though the gap between their expectations and the Plan has
5 narrowed, a gap still remains. Of these witnesses, some argue or imply that the Companies'
6 acceptance of a 5.3 percent productivity offset in the interstate jurisdiction is evidence that that
7 size of offset is appropriate in the state jurisdiction. One witness for AT&T, John Norsworthy,
8 developed his own estimates of productivity trends and input price trends which he argues should
9 be substituted for the values used by the Companies in their proposal.

10 As I will show, the Christensen study remains the best available measure of historical
11 productivity growth for the overall operations of large local exchange telephone companies; the
12 historical productivity differential for the Companies in the North Carolina state jurisdiction
13 would be lower than Dr. Christensen's estimate; and the counter-estimates produced by Dr.
14 Norsworthy are clearly biased upward. Moreover, there is simply no credible basis for
15 concluding that telephone input prices will rise more slowly than prices of inputs for the economy
16 generally. When these corrections are fully taken into account, Dr. Norsworthy's study does not
17 provide a basis for arguing that more restrictive productivity offsets are justified. Finally, the
18 estimate of productivity growth used in the interstate proceeding is itself not a good estimate of
19 productivity growth in that sector and provides no evidence of what overall productivity growth
20 has been, or will be, for local exchange companies, particularly in their state jurisdictions.

21 Third, some critics argue that the Companies' original proposal is deficient in not imposing
22 sufficient restrictions on the Company's pricing and service provision behavior to assure that
23 competition will develop efficiently. They argue that without such restrictions the Companies will
24 have both the incentive and the ability to keep out efficient competitors and thereby deny
25 consumers the benefits of a more competitive market. In contrast, it is my view that the
26 Stipulated Plan substantially reduces any incentives which existed under rate of return regulation
27 to cross subsidize potentially competitive services and thereby leverage monopoly power in one
28 market to create monopoly power in another. Moreover, I believe the Plan, in conjunction with
29 imputation standards currently in place, prevents the Company from effectively leveraging its
30 market power in some markets to create market power in another. Finally, and perhaps most
31 important, these issues do not have not be fully resolved here. The Commission is addressing

1 such issues already in other proceedings or will do so in the hearings which it has scheduled for
2 midyear.

3
4 **A. Initial rate rebalancing**

5 Q. DO YOU BELIEVE THAT A FULL BLOWN RATE HEARING IS NECESSARY TO
6 ASSURE THAT INITIAL RATES ARE CONSISTENT WITH A FAIR RATE OF RETURN
7 ON HISTORIC COSTS BEFORE THE PRICE CAP PLAN IS INTRODUCED?

8 A. In the current context, such a hearing is neither necessary or desirable. First, such proceedings
9 presuppose that the appropriate "cost of capital" can be measured. It is true that, as long as the
10 Companies continue to operate in a traditional rate base/rate of return environment, such
11 measures, while inevitably controversial, can be made. However, the whole purpose of this
12 proceeding is to consider changes in the structure of regulation to a price regulation framework
13 which is needed to accommodate changes in the competitiveness of telecommunications markets.
14 Those changes—both the increase in competitiveness and the shift to price regulation—will
15 inevitably alter the Companies' required cost of capital because they increase the riskiness of
16 investments in this business. After all, price caps eliminate historical assurances of a fair return
17 on the historical cost of capital or even assurances that prudent expense can be recovered. While
18 we can be sure that these changes will increase the cost of capital, we cannot be sure as to the
19 magnitude of the increase. As a consequence, because the appropriate target cost of capital is
20 unknown, a full-blown hearing to test the initial earnings consequences of the price regulation
21 proposal would not be productive.

22 Of course, this does not suggest that the question of what return the Companies are likely to
23 earn under this proposal is irrelevant. Clearly, returns which are markedly below historical
24 standards would be unacceptable to the Companies, while initial returns dramatically above
25 historical standards would be unacceptable to the Commission and the public. But casual
26 inspection of accounting data presented by the Companies clearly indicates that this is not a
27 problem. Rebuttal testimony put forth by Mr. Westmeyer indicates that anticipated earnings on
28 equity will be only 12.83 percent for Carolina Telephone and 10.48 percent for Centel. These are
29 well within or below any reasonable estimate of the Companies' current cost of equity capital and
30 certainly far below the cost of equity capital one should anticipate in a price regulation

1 environment with increasing competition. Consequently, there would seem to be no reason for
2 further inquiry.

3 Second, since the Plan is being implemented over a number of years and imposes rate
4 changes intended to adjust for productivity improvements, any judgments as to the
5 appropriateness of the rates in the Plan should be made by taking into account both the initial rate
6 of return and the subsequent price adjustments. Over the Plan's first five years, real telephone
7 rates under the Plan will decline by almost four percent per year. This rate of decline for the state
8 and interstate jurisdictions combined is about twice as large as the historical excess of local
9 exchange carriers' productivity growth over the growth in productivity for the rest of the
10 economy. Even allowing for some acceleration of productivity growth resulting from the
11 implementation of the plan, this implies rate reductions which substantially exceed the rate of
12 anticipated productivity improvement. Thus, even if one believed, despite evidence to the
13 contrary, that initial rates of return were too high, then, absent dramatic efficiency improvement
14 for which stockholders are entitled to capture higher returns, the plan would reduce earned
15 returns over the first five years.

16
17 Q. DO YOU AGREE WITH WITNESSES WHO SUGGEST THAT ALL RATES SHOULD BE
18 REALIGNED WITH COST BEFORE IMPLEMENTING THE PRICE CAPS PLAN?

19 A. No. Such changes are unnecessary to assure that the plan is in the public interest or that it meets
20 the goals set out in the enabling legislation. Moreover, they are not necessary to assure the
21 competitiveness of the relevant markets. Finally, aligning rates with *costs* as defined either by Dr.
22 Kaserman, Mr. Ellison or Mr. Wood would create serious disruptions in this market.

23
24 Q. PLEASE EXPLAIN THESE POINTS FURTHER.

25 A. Both Dr. Kaserman (testifying for AT&T) and Mr. Wood (testifying for MCI) hold that the
26 Companies should initially set rates at incremental costs for all services to establish the baseline
27 for price regulation. (Mr. Wood, however, would cap some rates at current levels.) In
28 competitive markets, they would use these costs as a floor to rates, and in noncompetitive markets

1 as a ceiling. They argue that such alignment is necessary to assure that competition takes place
2 on an even playing field.

3 To the extent that competitive pressures exist, market pressures are in any case likely to drive
4 rates towards incremental costs. In the long run, I too would like to see policies that let market
5 pressures induce the service providers to set rates close to incremental costs. That is a useful
6 long-term vision. When a service is priced at incremental cost, consumers will buy an
7 economically efficient amount of the service, and, in that market, the lowest-cost firms will
8 succeed while high-cost firms will not.

9 But there are serious problems with attempting to achieve such alignment instantaneously
10 through a regulatory proceeding. First, it is naive to dismiss as irrelevant the social and political
11 effects of moving the Companies' rates to incremental cost immediately. Although many
12 customers would gain from such a restructuring, many others would see large increases in bills.
13 Even if society as a whole would be better off with the changes, such assurances are unlikely to
14 satisfy those who experience sharp rate increases as a result of the change. As a consequence it is
15 almost undoubtedly politically impossible to realign abruptly telephone rates with costs.

16 Second, it is also unnecessary to insist on rebalancing before instituting price regulation.
17 Even under the existing rate structure, there will be substantial benefits to consumers in shifting
18 from rate of return regulation to price regulation, and there is no need to postpone those benefits
19 until rates can be realigned. Moreover, introduction of price caps is likely to facilitate the future
20 alignment of rates and costs in ways which cannot be achieved under traditional rate of return/rate
21 base regulation.

22 The realistic need to proceed slowly in the alignment of rates and costs is widely recognized.
23 For instance, after the divestiture of AT&T in 1984, the Federal Communications Commission
24 (FCC) decided that carrier common line charges exceeded incremental costs by a substantial
25 margin, which sent economically distorted signals to consumers and induced uneconomic bypass
26 of local exchange carrier access services. The FCC ordered reductions in the per-minute carrier
27 common line charge and the institution of subscriber line charges, but it phased in these changes
28 over several years. At the same time it encouraged states to adopt LifeLine and LinkUp pricing
29 programs to protect low-income subscribers. Even then, the FCC only corrected part of the
30 problem; the remaining carrier common line charge is still far above incremental cost.

1

2 Q. DO YOU AGREE THAT THE COMMISSION MUST REALIGN RATES AND COSTS
3 BEFORE INTRODUCING PRICE CAPS TO ASSURE THE COMPETITIVENESS OF
4 TELEPHONE MARKETS?

5 A. No, I do not. To illustrate this, consider several examples. Mr. Ellison argues that the
6 intraLATA toll market cannot be fairly competitive between the Companies and the
7 interexchange carriers unless the Companies first set access rates equal to their incremental costs.
8 Specifically, he testifies that above-cost access charges would cause "higher intraLATA rates as
9 intraLATA competition from other telecommunications companies is thereby foreclosed."¹⁶ In
10 saying this, he appears to believe that, in most cases, the Companies' access service is a
11 necessary input into the interexchange carriers' supply of retail toll service. Unless the price for
12 access service is reduced to costs, they argue, the Companies will have both the ability and the
13 incentive to leverage their assumed monopoly in the market for access to achieve a monopoly in
14 the retail toll service market.

15 But, under current Commission imputation rules, there is no reason why current access rates,
16 even though they are clearly well above cost, would impede full and fair competition in the toll
17 market. On the average, both toll rates and rates charged for customers using expanded local
18 calling service must pass an imputation test such that these rates cannot fall below the sum of the
19 access charge plus 0.5 cents per minute. The 0.5 cents per minute is assumed to reflect the
20 Companies' incremental costs of supplying retail toll service. This test assures that the
21 Companies cannot engage in effective price squeeze tactics against the interexchange carriers.
22 Since the Companies' toll rates must cover the access fees they charge to others plus their own
23 incremental cost of serving retail customers, the access fees cannot put the interexchange carriers
24 at a competitive disadvantage in toll markets. Both the Companies and their competitors must
25 recover the same level of access costs.

¹⁶ G. Wayne Ellison, direct testimony on behalf of AT&T Communications of the Southern States (January 31, 1996), p. 13, lines 4-6. Dr. Kaserman is more circumspect, but he also says, "Wholesale services should also be priced at efficient levels in order to provide competitors (both actual and potential) correct signals concerning the true costs of supplying local exchange services and functions *and to limit the JLEC's ability to engage in anticompetitive price squeezes.*" (David L. Kaserman, direct testimony on behalf of AT&T Communications of the Southern States (January 31, 1996), p. 18, lines 10-13, emphasis added.) To the contrary, setting access prices at costs is not necessary to prevent price squeezes if there are imputation rules.

1 This analysis, of course, assumes that the Companies were to have an absolute monopoly
2 over access services—that these are effectively an essential facility which the interexchange
3 carriers must buy from the Companies to compete in this market. In reality this is not the case.
4 For many calls the interexchange carriers can and do bypass the Companies' access service
5 altogether by using their own facilities or can buy dedicated access from the Companies. To the
6 extent such competition is viable, setting access charges above costs will actually encourage
7 competition in access services. The interexchange carriers will seek to build their own facilities
8 to avoid the Companies' high access charges. While such competition might be uneconomic—
9 the competitor might build competing facilities even when the costs of these exceeded the
10 Companies' access costs—the resulting competitive pressure will undoubtedly induce the
11 Companies to move access charges towards incremental cost. Thus, if the access market is
12 competitive, it clearly does not take Commission action to induce the Companies to align rates
13 with costs. The Companies are likely to move their own access charges closer to costs to avoid
14 losing business to competing access providers.

15 Thus, whether we regard the Companies as monopolies or as competitive access providers,
16 Commission action to align access charges with costs is not necessary to assure competition in
17 downstream retail markets. If the Companies are access monopolists, then downstream retail
18 markets will be effectively competitive regardless of the level of access charges as long as the
19 imputation test described above is in place. On the other hand, if the access market is itself
20 potentially competitive, then the Commission does not have to realign rates with costs; it merely
21 has to allow the Companies freedom to do so. Competitive pressures will achieve the appropriate
22 alignment over time.

23

24 Q. ARE THERE ANY CIRCUMSTANCES IN WHICH THE FAILURE TO ALIGN RATES
25 AND COSTS WILL CAUSE COMPETITIVE DISTORTIONS?

26 A. Yes there are. Some current rates are well below the Companies' incremental costs. This is
27 certainly true with respect to monthly service for residence telephone lines and also true for local
28 usage charges, which of course are zero for customers who have flat-rate service. It is possible
29 that competition will not occur in those markets at current rates but would occur if rates were

1 raised to cover incremental cost. In that case, current pricing is discouraging competition which
2 might otherwise occur.

3 Although the Plan probably exacerbates this problem during its first three years, it might
4 permit a slow and slight narrowing of the gap between basic service charges and costs during the
5 fourth and fifth years. Faster alignment may simply be politically infeasible and there is no reason
6 to delay the implementation of the stipulated Plan until this more desired alignment is achieved.
7 Such a course of action would represent allowing the perfect to be the enemy of the good.

8 It is particularly disingenuous to suggest, as Dr. Kaserman does, that residence consumers in
9 general or especially in rural areas will necessarily become better off by realigning their basic
10 service rates with cost. The immediate effect of such an adjustment, however justified on
11 efficiency grounds, will be to increase prices paid by residence consumers and, hence, other
12 things equal, will diminish their well being. Even if the realignment of price with cost attracts
13 additional competition, the net effect will still be to increase rather than reduce rates for these
14 consumers. This is because the new competitors enter only at the higher and not the initial price;
15 hence, we may conclude that their prices will be above those currently charged for these services.

16

17 Q. ARE THERE OTHER PROBLEMS WITH SEEKING TO ALIGN RATES WITH
18 INCREMENTAL COST BEFORE OR AS A PART OF IMPLEMENTING THIS PRICE
19 REGULATION PLAN?

20 A. Yes, there are numerous serious problems with this approach, particularly as proposed in the
21 testimonies presented by AT&T's witnesses. As I understand these proposals, in competitive
22 markets they would establish a floor on rates equal to Total Service Long Run Incremental Cost
23 (TSLRIC). In supposedly monopolistic markets, they would set TSLRIC as a rate ceiling. The
24 first problem with this approach is that it sets too high a floor on rates in competitive markets.
25 TSLRIC sets rates to assure that the overall forward-looking cost of providing this service are
26 covered by rates, and the estimation process assumes that the service had not been offered before
27 at all. However, where there are economies of scale or startup costs in providing a particular
28 service, this approach would set rates above the incremental cost of expanding service output.
29 The effect would then be to encourage competition in a market which could more economically
30 be served by a single producer. Encouraging competition under such circumstances would

1 increase the total economic cost of serving the public. It is important that the Commission not
2 prejudge this issue as Dr. Kaserman's testimony suggests they should. It must not be the job of
3 the Commission to engineer rules that ensure the success of competitors in all
4 telecommunications markets, regardless of whether such entry is economic or not. Rather, the
5 Commission's role should be to create an environment where competition prevails if it is
6 economic and fails when it is not. To meet this test, the customary floor on rates charged by the
7 incumbent carrier should be no higher than Long Run Incremental Cost (LRIC).

8 A second problem arises if TSLRIC were used to set a ceiling on rates in monopoly markets.
9 If producers could not collect more than TSLRIC in any market, there would be no opportunity
10 for them to recover common costs which do not represent the specific cost of supplying any one
11 service but are necessary to produce all outputs in common. Where economies of scope exist,
12 TSLRIC for all services produced will not be sufficient to cover the aggregate costs of all
13 services. Thus, in the presence of any economies of scope, the pricing rules proposed by
14 AT&T's witness would make it impossible for the incumbent carrier to recover its full costs.

15 A third problem relates to the difficulty of measuring incremental costs. Those measurement
16 difficulties mean that any regulatory proceeding designed to align rates with such costs will be
17 enormously controversial, costly and time consuming. Dr. Kaserman acknowledges this problem
18 when he comments that a difficulty with implementing imputation tests is the difficulty in
19 measuring incremental cost. Incongruously, he also insists that incremental costs be estimated for
20 every service the Companies offer before introducing price regulation. Such a tedious procedure
21 would impose unreasonable costs and delays in pursuit of a questionable objective.

22 Finally, the rigid imposition of incremental cost pricing rules would ignore the dynamics of
23 pricing in a competitive market. Competitors often price below their own incremental costs for
24 short periods of time in order to attract new customers. An incumbent telecommunications
25 carrier faced with such threats may be forced to match such price decreases in order to remain in
26 the market. To deny such flexibility to the incumbent carrier risks forcing it to lose market share
27 even when it is the lowest cost producer. While comparisons of incremental costs and prices may
28 well provide a useful test of predatory behavior, rigid requirements that rates can never fall below
29 such a limit is likely to restrain rather than encourage competition.

1 Q. DO OTHER WITNESSES MAKE A SIMILAR CLAIM THAT SERVICES SHOULD BE
2 PRICED AT INCREMENTAL COSTS?

3 A. Yes, Mr. Wood makes the same claim. A reason he gives is different, however:

4 If CT&T/Centel's rates continue to permit it to recover the cost of existing
5 technology (in effect, allowing the current revenue requirement to survive the
6 elimination of rate of return regulation), it will have no incentive to invest in new,
7 lower cost technologies before existing investments are fully depreciated. In
8 effect a primary limitation of rate of return regulation ... is a [sic] integral
9 component of the CT&T/Centel price caps proposal.¹⁷

10 That argument is fallacious. Under traditional rate of regulation, decisions affecting costs tended
11 also to affect rates in a similar way. In contrast, much of the purpose of price regulation is to
12 break the link between rates and decisions affecting costs. Under price regulation, the Companies
13 have a profit incentive to make efficient business decisions. If the net present value of cash flows
14 is higher by introducing a lower-cost technology than by keeping an old technology, then it will do
15 so to maximize the value of the firm. Depreciation is a separate accounting decision that follows
16 after the business decisions.

17

18 B. Price regulation and productivity adjustments

19 Q. SEVERAL WITNESSES HAVE CRITICIZED THE COMPANIES' PROPOSAL, ARGUING
20 THAT IT DOES NOT REDUCE PRICE SUFFICIENTLY TO REFLECT ANTICIPATED
21 PRODUCTIVITY GAINS OR DECLINES IN RELATIVE INPUT PRICES. WOULD YOU
22 COMMENT ON THOSE TESTIMONIES?

23

24 A. Yes. Several witnesses have suggested that these figures are too low and that, even without
25 extraordinary effort, the Companies can achieve faster growth in productivity and, hence, faster
26 declines in real price. In addition, these witnesses argue that greater price reductions can be
27 achieved over time because they expect input prices to rise more slowly (or decline more rapidly)
28 for telecommunications than for other industries.

¹⁷ Don J. Wood, testimony on behalf of MCI Telecommunications Corporation (January 31, 1996), p. 23, lines 9-17.

1 These conclusions are contained in the testimonies of two witnesses: G. Wayne Ellison (a
2 witness for AT&T) makes such an argument, citing as evidence the price caps formula which the
3 Companies accepted in the FCC proceedings on interstate access charges. That cap constrained
4 prices to rise no faster than inflation minus 5.3 percent. The testimony of Dr. Norsworthy (for
5 AT&T) makes a more comprehensive attack on Dr. Christensen's study and his estimates of the
6 productivity differential. He develops his own estimates of the productivity differential and input
7 price change differential for Carolina Telephone.¹⁸ Dr. Norsworthy claims that its productivity
8 differential should be 3.65 percent per year and that its input prices can be expected to rise 0.34
9 percent per year more slowly than prices in the rest of the economy. These factors, combined
10 with an assumption that productivity will grow 0.5 percent per year faster in the future than in the
11 past, lead him to conclude that the Companies' price regulation plan should be such that rates in
12 the aggregate should rise no faster than the rate of inflation less 4.44 percent per year.¹⁹

13

14 Q. WHY DO YOU BELIEVE THAT THE PRICE CAPS FORMULA ADOPTED IN THE
15 INTERSTATE JURISDICTION DOES NOT PROVIDE ANY GUIDE TO THE APPRO-
16 PRIATE PRICE CAP FORMULA TO BE APPLIED HERE?

17 A. Price caps adopted in the interstate jurisdiction apply principally to interstate access service. It is
18 reasonable to expect that productivity growth experienced historically in this market would be
19 substantially greater than the overall rate of productivity growth experienced by local exchange
20 companies in supplying all services.

21 Much of the productivity growth experienced in the telecommunications industry is related to
22 reductions in switching costs and to the savings in transmission costs which occur as a result of
23 using electronics to expand the carrying capacity of transmission facilities. In contrast,
24 productivity growth in supplying loop services has historically been markedly slower. Thus, even

¹⁸ Dr. Norsworthy uses Carolina Telephone as a proxy for the two Companies.

¹⁹ John Norsworthy, direct testimony on behalf of AT&T Communications of the Southern States (January 31, 1996), Table 1. His testimony appears to contain inconsistencies: (1) The text of his testimony (p. 10, line 20) says that input prices for the U.S. Nonfarm business rose 3.04 percent per year, whereas Table 1 shows 3.08 percent. (2) In Dr. Norsworthy's similar testimony in Docket P-55, Sub 1013 (January 17, 1995), he instead shows the input price growth for U.S. non-farm business to be 2.97 percent per year (Exhibit 1, Table 2). (3) In his testimony for the current dockets, he says that productivity in U.S. non-farm business grew 0.04 percent per year (Table 1), whereas in the other docket, he said it grew 0.15 percent per year (Table 3).

1 if the productivity differential is 5.3 percent per year for interstate access services, this would not
2 imply that a similar productivity differential was appropriate for other components of telephone
3 service. To the contrary, the productivity differential for services in the state jurisdiction must
4 necessarily be less than 5.3 percent per year. Dr. Norsworthy himself argues that the productivity
5 growth for access services must be greater than it is for other services.²⁰ Further, since interstate
6 productivity growth must be faster than the overall average productivity growth for local
7 exchange carriers, the productivity differential for the state jurisdiction must be less than the
8 productivity differential for their operations as a whole; *i.e.*, it must be less than 2.1 percent per
9 year.

10
11 Q. DO YOU AGREE WITH DR. NORSWORTHY'S ASSERTIONS THAT HIS MEASURES
12 OF TOTAL FACTOR PRODUCTIVITY AND INPUT PRICE GROWTH RATES FOR
13 LOCAL EXCHANGE CARRIERS, CAROLINA TELEPHONE, AND THE U.S. ECONOMY
14 ARE MORE RELIABLE THAN THOSE OF DR. CHRISTENSEN AND THOSE YOU
15 PROPOSE?

16 A. No. Dr. Norsworthy makes a number of claims regarding Dr. Christensen's study but provides
17 absolutely no evidence to support his assertions. He, for instance, claims that Dr. Christensen's
18 study "is based on rather outmoded methods" or that the Christensen study "uses depreciation
19 rates that have no basis in the telecommunications industry" but provides no further information
20 to support his claim.²¹ Regarding the claim that Dr. Christensen's study is based on "outmoded
21 methods," the California Public Utilities Commission noted in a recent decision that "Dr.
22 Christensen is a nationally recognized expert in productivity analysis with a substantial record of
23 original research and publications in journals subject to peer review."²²

24 Dr. Norsworthy's claim about depreciation rates is simply foolish. The substance of his
25 concern appears to be that Dr. Christensen employed "economic" depreciation rates rather than
26 "accounting" depreciation rates prescribed by the regulating agencies—the FCC and the state
27 regulatory commissions. I have two observations to make.

²⁰ Norsworthy, p. 13, lines 5-11.

²¹ Norsworthy, p. 11, lines 16-22.

²² California Public Utilities Commission, *Decision 95-12-052*, page 66.

1 First, economic depreciation rates are the only appropriate measure of depreciation to use,
2 and accounting depreciation rates are meaningless for measuring productivity growth. The
3 purpose of a Total Factor Productivity study is to determine how efficiently inputs are used to
4 produce outputs. Accounting depreciation rates prescribed by the FCC and state commissions
5 are commonly recognized as being too long relative to the capital's useful life. Thus, using
6 accounting depreciation rates in a Total Factor Productivity study means that you are *pretending*
7 that capital lives are longer than they truly are. This will lead to Total Factor Productivity results
8 that do not truly measure how inputs are used to produce outputs.

9 Second, if Dr. Christensen had used the prescribed depreciation rates in his study, the
10 measured Total Factor Productivity of local exchange carriers would have *decreased*. In a Total
11 Factor Productivity study, when depreciation rates are decreased (capital in the study is used
12 more slowly) the net additions to investment each period are higher and the measure of capital
13 input grows; thus the measure of overall input grows, and Total Factor Productivity growth is
14 reduced.

15 It is noteworthy, in regard to Dr. Norsworthy's overall claim that Dr. Christensen's study
16 "has a number of serious flaws," that Dr. Christensen's study has been available for public
17 scrutiny since 1994, it has been published and updated numerous times, it has been subject to
18 discovery and examination in state regulatory jurisdictions throughout the U.S. and at the FCC,
19 and, to my knowledge, no economist ever found the study to be flawed in the ways Dr.
20 Norsworthy claims.

21

22 Q. WHAT ABOUT DR. NORSWORTHY'S OWN ESTIMATES? ARE THEY VALID?

23 A. No. Dr. Norsworthy's so-called performance-based Total Factor Productivity study is critically
24 flawed, and its Total Factor Productivity results are meaningless. In addition, using Dr.
25 Norsworthy's own local exchange carrier input price growth data, it is easy to show that a non-
26 zero input price differential cannot be supported.

27

28 Q. HOW IS DR. NORSWORTHY'S OWN STUDY FLAWED?

1 A. Dr. Norsworthy's local exchange carrier Total Factor Productivity study does not use a *total*
2 measure of output. This is a fatal flaw and renders his study and its results meaningless for the
3 purpose of setting a productivity offset factor. A Total Factor Productivity study, as the name
4 implies, measures the relationship between the growth rates of *total* inputs and *total* outputs.
5 This is an important distinction because there are a host of other "partial" productivity measures,
6 such as output per labor hour or access lines per number of employees, which specifically do not
7 measure total activity and which no credible economist has ever claimed would be a sufficient
8 measure of productivity to determine a productivity offset in a price regulation plan. Output per
9 labor hour uses total output but only one kind of input (labor hours). Access lines per employee
10 uses only one output (access lines) and only one input (number of employees).

11

12 Q. WHAT MEASURE OF LOCAL EXCHANGE CARRIER OUTPUT DID DR
13 NORSWORTHY USE IN HIS STUDY?

14 A. Dr. Norsworthy selected only local usage (measured as the number of local calls) and intrastate
15 toll and access (measured as call minutes) to construct his measure of output. He ignored entirely
16 that a local exchange carrier also provides other outputs (e.g., lines, the primary connection
17 between its customers and the network).

18

19 Q. HOW DOES THE OMISSION OF LINES FROM OUTPUT AFFECT DR
20 NORSWORTHY'S MEASURE OF OUTPUT?

21 A. Local exchange carriers provide a variety of telecommunication services, each of which must be
22 properly accounted for in the construction of an output index used in a Total Factor Productivity
23 study. Since output is one of two key elements of a such a study (the other being inputs), the
24 reliability of Dr. Norsworthy's results depend critically on how well output is measured. In Dr.
25 Christensen's study of local exchange carrier productivity, seven major categories of services
26 were used: local service, interstate end user access, interstate switched access, interstate special
27 access, intrastate access, long distance service, and miscellaneous services. Of these Dr.
28 Norsworthy omits entirely outputs measuring line growth and a variety of other miscellaneous
29 outputs. These are important omissions, and, if lines were included in Dr. Norsworthy's study,

1 we know with certainty that his measure of local exchange carrier and Carolina Telephone Total
2 Factor Productivity growth would be substantially smaller.

3 We can see that Dr. Norsworthy's measured Total Factor Productivity growth would have
4 been smaller by considering how an output index is constructed. In a Total Factor Productivity
5 study, output growth is a revenue-weighted average of all pertinent output categories. Dr.
6 Norsworthy only considered two categories—intrastate toll and switched access minutes and
7 local calls. These services grow far more rapidly than the number of lines grow. He reports that
8 their growth rates for Carolina Telephone are about 8.4 percent and 3.9 percent, respectively.²³
9 Yet the average annual growth in lines between 1988 and 1993 (the closest match that could be
10 made with the time period used in the Norsworthy study) for the local exchange carriers overall
11 was 3.1 percent,²⁴ and the growth rate for Carolina Telephone lines was 3.4 percent between
12 1990 and 1993 (the period for which I have data). Both of these growth rates are less than the
13 8.4 percent and 3.9 percent growth rates for minutes and calls used by Dr. Norsworthy. In Dr.
14 Norsworthy's output measure, he essentially assigned a weight of zero to the growth rate of lines.
15 A measure of output that gives a non-zero weight to the growth rate of lines will be smaller
16 because line growth is so much less than the growth of calls or minutes. Dr. Norsworthy's
17 omission of line growth from the calculation in and of itself is enough to explain much of the
18 difference between Dr. Christensen's estimate and Dr. Norsworthy's.

19
20 Q. ARE THERE OTHER FLAWS IN DR. NORSWORTHY'S APPROACH TO ESTIMATING
21 PRODUCTIVITY GROWTH?

22 A. Yes, there are at least two other fatal flaws. First, the period over which he purports to measure
23 productivity is entirely too short to devise a reliable trend. Numerous studies have shown that
24 rates of productivity growth vary widely from year to year, and, given such variations, a six-year
25 period is simply too short to obtain a reliable measure of the productivity trend. In contrast, Dr.
26 Christensen's estimate is based on a 12-year period and, hence, provides a more reliable basis for
27 extrapolation than does Dr. Norsworthy's estimate.

²³ Norsworthy, Table 1.

²⁴ *Monitoring Report*. Federal Communications Commission CC Docket 87-313 (May 1995), Tables 3.12 and 4.6.

1 Dr. Norsworthy's own data show that the short period he uses is suspect. According to his
2 measure of input prices, from 1988 to 1994 Carolina Telephone's input prices grew by about 18
3 percent (2.75 percent compounded for six years).²⁵ In contrast, according to Dr. Norsworthy's
4 testimony in the similar docket for BellSouth, BellSouth's input prices grew only 8 percent during
5 the same period (1.31 percent compounded for six years).²⁶ Such a large difference, although not
6 inconceivable, certainly raises a question.

7 Second, Dr. Norsworthy's estimate is based on data solely for Carolina Telephone. This does
8 not provide an appropriate approach to establishing a rate of productivity growth for use in a price
9 regulation proceeding. To avoid suppressing a company's incentives to improve productivity,
10 estimates of anticipated productivity should be based on a large number of local exchange
11 carriers and not on historical performance for the reference firm.

12

13 Q. WHAT ABOUT THE ADDITIONAL ALLOWANCE WHICH DR. NORSWORTHY
14 PROPOSES TO MAKE FOR THE ALLEGED SLOW RATE OF GROWTH IN INPUT
15 PRICES?

16 A. There is no valid basis for this adjustment. There is simply no evidence that input prices behave
17 any differently over the long term for the telecommunications industry than for the rest of the
18 economy. Dr. Norsworthy bases his conclusion on an historical period which is entirely too short
19 to derive these conclusions reliably. The slower rate of growth of input prices observed in recent
20 years reflects the effect of recent declines in interest rates which are highly unlikely to continue in
21 the future.

²⁵ Norsworthy, Table 1.

²⁶ John R. Norsworthy, direct testimony on behalf of AT&T Communications of the Southern States, Docket P-55, Sub 1013 (January 17, 1996), Table 2.

1. Dr. Norsworthy calculates the average growth of input prices for Carolina Telephone for
2. the period 1988 to 1994 and for U.S. nonfarm businesses for the period 1985 to 1993. (The
3. inconsistency between those two time periods in itself distorts his results.) He concludes that
4. input prices rose 0.34 percent slower for Carolina Telephone than for nonfarm businesses as a
5. whole. He then assumes that the two series will continue to differ by the same amount in the
6. future. A simple subtraction of two historical averages, however, is not an adequate analysis of
7. future input price differentials. When comparing two data series for this purpose, the analyst
8. must consider more than just the difference between the two averages. The analyst must also
9. take into account the variability within the two series. The more widely dispersed the data, the
10. less confident we can be about the historical point estimate of average growth rates for the two
11. data series and the more cautious we must be about our expectations of the future.

12. Q. IS THERE A FORMAL STATISTICAL TEST TO DETERMINE WHETHER TWO SERIES
13. ARE DIFFERENT?

14. A. Yes. The appropriate statistical procedure is a conventional t-test. For the case at hand, it would
15. be a t-test of the hypothesis that RBOC input price growth equals U.S. input price growth or that
16. their difference equals zero.

17. Q. DO YOU HAVE THE RESULTS OF SUCH A TEST?

18. A. Yes. Using Dr. Norsworthy's RBOC and U.S. input price data,²⁷ I have the results of a t-test of
19. the hypothesis that the difference in the average rate of growth in the two series is zero. I also
20. have this test for Dr. Norsworthy's BellSouth data²⁸ and for data that has been submitted to the

²⁷ Comments of AT&T on the *Fourth Further Notice of Proposed Rulemaking*, Federal Communications Commission CC Docket 94-1, Appendix B, Statement of Dr. John R. Norsworthy, January 11, 1996.

²⁸ John R. Norsworthy, Direct Testimony before the North Carolina Public Service Commission, Docket No. P-55, Sub 1013 (January 17, 1996), Table 2.

Federal Communications Commission by Dr. Christensen.²⁹ The results of the analysis are presented in Table 3. For each of the five different cases considered, the calculated t-statistic is substantially below the relevant t-critical value at the conventional confidence level. Thus, we cannot reject the hypothesis that the difference is zero between U.S. input prices on the one hand and, on the other hand, any of the series for RBOCs, BellSouth, and Dr. Christensen's selection of local exchange carriers. Dr. Norsworthy's testimony does not report his data series on input prices for Carolina Telephone, but, considering the very small difference between input price growth for it and for the U.S. economy (0.34 percent) and the statistical insignificance of the differences of the series reported in Table 3, I am confident that a t-test would have found that the difference between the Carolina Telephone input price series and the U.S. price series was also statistically insignificant. Because of this evidence, it is inappropriate to add Dr. Norsworthy's calculation of an input price trend differential of 0.34 percent for the Companies.

Table 3. We Cannot Reject the Hypothesis That There Is No Difference in Input Price Growth between U.S. v. RBOCs or BellSouth or LECs

<i>Study</i>	<i>Period</i> ³⁰	<i>t-statistic</i>	<i>t-critical @ 0.05</i>
Norsworthy RBOCs	1985-1993	1.114	2.365
Norsworthy BellSouth	1988-1993	0.710	2.776
Christensen	1985-1992	0.993	2.447
Christensen	1984-1992	1.274	2.365
Christensen	1988-1992	0.182	3.182

Q. HAVE OTHER ANALYSTS FOUND SIMILAR RESULTS?

A. Yes. In the recent review of the California Incentive Regulation Plan, Dr. Christensen and Dr. Gregory M. Duncan considered the question of whether there is a difference between the trends of local exchange carrier and U.S. input prices and determined that there is no difference.³¹

²⁹ USTA Ex Parte Filing to the Federal Communications Commission in CC Docket 94-1 (February 1, 1995), Christensen Affidavit.

³⁰ The t-statistics for the Norsworthy RBOC and BellSouth tests are calculated after excluding his 1984 data points, since he uses extrapolations for that year rather than data.

1

2 Q. ARE THERE ANY OTHER REASONS WHY DR. NORSWORTHY'S CALCULATED
3 INPUT PRICE DIFFERENTIAL SHOULD BE IGNORED?

4 A. Yes. Dr. Norsworthy considered only the most recent six-year period for Carolina Telephone in
5 his analysis and, because input prices are so volatile, it is unlikely that he could make an accurate
6 assessment using such a short period. Using local exchange carrier (LEC) and U.S. input price
7 growth rates from data provided to the FCC by Dr. Christensen in FCC Docket 94-1,³² we can
8 observe how the relationship between LEC and U.S. input prices changes between 1948 and
9 1992. Table 4 shows that the observed difference in the average growth rates for LEC and U.S.
10 input prices can vary widely depending upon the period chosen and that it is just as likely that the
11 average growth of LEC input prices exceeds the average growth of U.S. input prices. Over the
12 course of the longest period available (1948-1992), LEC and U.S. industry input prices have, on
13 average, grown at virtually identical rates. Even over substantially shorter periods, there is no
14 observable difference between average growth rates. For instance, between 1970 and 1992, the
15 average input price differential is only 0.1 percent. Throughout the 1970s, average growth for
16 LEC input prices was *more* rapid than average input price growth for the U.S. economy as a
17 whole. This is true for the 1972 to 1992 period as well.

³¹ Dr. Laurits R. Christensen, testimony before the Public Utilities Commission of the State of California, I.95-05-047 (September 1995); and Dr. Gregory M. Duncan, testimony before the Public Utilities Commission of the State of California, I.95-05-047 (September 1995).

³² USTA Ex Parte Filing to the Federal Communications Commission in CC Docket 94-1 (February 1, 1995), Christensen Affidavit.

Table 4. Short Time Series Are Misleading: Over Long Periods, the Input Price Trend Differential Is Close To Zero

Period	U.S. - Telephone Input Price Growth
1984-1992	2.2%
1970-1992	0.1%
1972-1992	-0.1%
1980-1992	0.5%
1970-1980	-0.5%
1948-1992	0.1%

Figure 1 plots the U.S. telephone input price differential since 1948. Note that the line frequently crosses zero and that over the course of the 44 periods, U.S. input prices grew faster than telephone input prices in 25 periods, and U.S. input prices grew *slower* than telephone input prices in 19 periods.

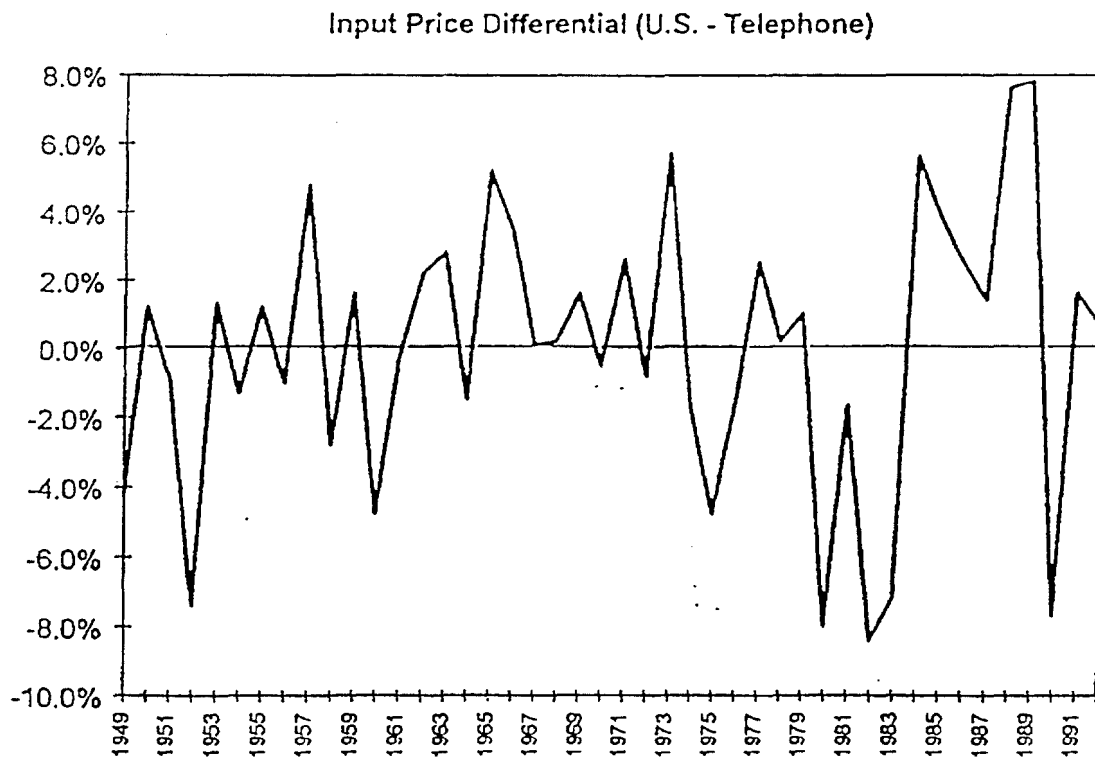


Figure 1. The Input Price Differential Varies Greatly Around Zero

1

2 Q. ARE THERE OTHER REASONS TO BELIEVE THAT THE RECENTLY OBSERVED
3 DIFFERENCE IN INPUT PRICES IS UNUSUAL AND UNLIKELY TO CONTINUE?

4 A. Yes. The observed difference in input prices since divestiture is unlikely to continue because it is
5 the result of circumstances that are unique to that period. LECs are more capital intensive and
6 therefore more sensitive to interest rate fluctuations than the average firm in the economy as a
7 whole. Thus, if interest rates fall, LEC capital input prices will be observed to fall more rapidly
8 than capital input prices for the economy as a whole. Throughout much of the period studied by
9 Dr. Norsworthy, interest rates were declining. Over the period from 1988 to 1994, the 30-year
10 Treasury Bond Rate fell from an average of about 9.0 percent in 1988 to an average of about 7.4
11 percent in 1994. Over the longer post-divestiture period, rates have fallen even further, from an
12 average of 12.4 percent in 1984. This magnitude of reduction in interest rates, which accounts
13 for much of the difference Dr. Norsworthy observes between input prices for LECs or Carolina
14 Telephone and input prices in the rest of the economy, is unlikely to continue.

15

16 C. Modifications proposed to increase competitiveness

17 Q. DR. KASERMAN SUGGESTS THAT, IN ADDITION TO PRICING AT INCREMENTAL
18 COST, NUMEROUS OTHER REGULATORY RULES SHOULD BE IMPLEMENTED AS
19 PART OF THIS PRICE REGULATION PLAN. DO YOU AGREE?

20 A. No, I do not. Dr. Kaserman argues that before implementing this pricing proposal, or as part of
21 it, the Commission should implement numerous restrictions on the incumbent carrier to assure
22 that telecommunications markets are as competitive as possible. In particular, he would require
23 specific rules prohibiting price discrimination, eliminating any company restrictions on reselling
24 of services, and requiring the incumbent to unbundle all of the services it sells. These rules are in
25 addition to his proposed requirement that all prices be aligned with incremental cost.

26 I agree with Dr. Kaserman that, once price caps are in place, an important role the
27 Commission should play in the new telecommunications environment is promoting competition
28 where it appears to be economic. To the extent it is effective in doing so, there will be less need
29 for explicit price regulation, and more price setting and stimulation of efficiency can be turned

1 over to the market. I would disagree, however, that such procompetitive rules need to be
2 implemented either as part of this proposal or in advance of it.

3 First, the approach suggested by Dr. Kaserman is probably not feasible. It would be
extremely difficult to develop a comprehensive set of rules as part of this proposal that will assure
that there will be effective competition. Second, doing so is unnecessary. The Commission's
responsibility and opportunity to encourage competition does not end with the implementation of
this price regulation proposal but is ongoing. There will be many opportunities over the next few
years for the Commission to take a wide variety of actions designed to implement competition.
Other forums explicitly targeted to competition issues are more appropriate for evaluating and
implementing rules supporting such principles than is this price regulation proceeding. Third,
whatever is done as part of this proceeding to assure competitive markets, it is unlikely to
represent a comprehensive solution to this problem. Encouraging economic competition in
elecommunications is an ongoing responsibility of the Commission which is better addressed by
dealing with specific claims of anti-competitive behavior on an ongoing basis than by trying to
establish immutable rules at the outset.

Finally, it is wrong to assume that an actively pro-competitive policy by this Commission,
however desirable it may be, is necessary to assure the competitiveness of telecommunications
markets. The fundamental pressure to assure competition is likely to come from existing and
potential competitors and to operate through the marketplace. History suggests that, where such
competitors exist, they will prevail regardless of regulatory policies. Moreover, in the absence of
21 such underlying market pressures, there is little evidence that regulatory policies have a dramatic
22 effect on market competitiveness. In addition, competitors who feel that they have been subjected
23 to monopolistic practices have access to the courts to enjoin and punish such practices.

24

25 Q. DR. KASERMAN ALSO CRITICIZES THE CONSTRUCTION OF THE MARKET
26 BASKETS USED IN THE COMPANIES' ORIGINAL PROPOSAL AND ARGUES THAT
27 THEY DO NOT SUFFICIENTLY DISTINGUISH BETWEEN MONOPOLY AND NON-
28 MONOPOLY SERVICES. IS HIS CRITICISM VALID FOR THE STIPULATED PLAN?

29 A. No. Dr. Kaserman argues that more rigorous tests should have been used to identify competitive
30 markets and to distinguish them from those where substantial market power exists. He argues

1 that for each market a careful effort should be made to define the relevant market, measure
2 current market shares to determine current competitiveness and examine entry conditions to
3 assess potential competitiveness. While in principle I agree that he has described the traditional
4 approach of economists to measuring competitiveness, I would also support his additional
5 observation that "the question of market definition is . . . one of the most unresolved in
6 economics," and perhaps the next most unresolved would be the precise measurement of the
7 entry conditions needed to assure competition. Given these measurement difficulties, it is far
8 from obvious that a more rigorous analysis would have produced any different or any better
9 division of services than that used in the Stipulated Plan. In judging the need for further rigor,
10 one should consider not only the limited gains from further analysis, but the risk of
11 misclassification. All service categories except the one which is unambiguously competitive are
12 subject to quite restrictive price caps and, hence, are likely to experience real rate decreases. In
13 addition, since the Plan caps residence local exchange services for three years and limits relative
14 changes in rates for individual services, there is little danger of significant market power being
15 exploited. Finally, if for specific services, pricing policies are jeopardizing competition, potential
16 competitors can always appeal to the Commission or the courts to intervene on the basis of a
17 specific practice.

18 Finally, I note that, although Dr. Kaserman argues that the degree of competition should have
19 determined the grouping of services into service categories, Dr. Norsworthy, also testifying for
20 AT&T, in effect contradicts him. The latter ignores Dr. Kaserman's criterion and instead claims
21 that one should group "services into categories that are reasonably homogeneous as to their cost
22 trends or traffic sensitivity or demand growth. . . . [T]hese are the factors that usually go into the
23 determination of categories of services for incentive regulation."³³

24
25 **D. The MCI proposal**

26 Q. PLEASE COMMENT ON MCI'S "COMPETITION PLUS" PROPOSAL, AS
27 PROPOUNDED BY MR. WOOD.

³³ Norsworthy, p. 14, lines 20-25.

1 A. This proposal does not provide a workable alternative to the Stipulated Plan. By freezing all of
2 the Companies' "noncompetitive" services at their current levels, MCI's proposal would prevent
3 the alignment of rates and costs which over the long term is necessary to assure market efficiency
4 and to provide the Companies a reasonable opportunity to recover their historical costs. MCI's
5 proposal would not even permit the Companies to adjust rates for these services when inflation
6 exceeds the expected rate of growth of productivity. Moreover, the MCI proposal would deny
7 the Companies the opportunity to modify their rates in "noncompetitive" markets in response to
8 exogenous changes in costs which are not reflected in general inflation indices. Not surprisingly,
9 coming from one of the Companies' principal competitors, the proposal appears simply to be an
10 effort to impose such serious financial constraints on them that they cannot compete effectively.

11 I have several more specific comments about it. First, individual proposal elements and the
12 overall effect of the proposal are arbitrary. Without reference either to current Company revenues
13 or to a reassessment of its revenue requirement, MCI would have this Commission arbitrarily set
14 some rates at cost and freeze others. The permanent cap on so-called "other-than-competitive"
15 rates is one of the arbitrary elements. Although the Commerce Department forecasts GDP-PI
16 inflation of between 2.9 and 3.6 percent for the next several years, historically the economy has
17 had unanticipated periods with inflation far higher than that and few periods with inflation much
18 less than that. If inflation unexpectedly rose to much higher levels, the financial strain on the
19 Companies would be intolerable.

20 Another element of MCI's proposal accentuates the arbitrariness of its proposal:

21 Avoid adoption of any automatic price adjustment mechanisms, thus relieving
22 CT&T/Centel and the Commission of contentious proceedings on productivity
23 factors, exogenous factors, and inflation factors.³⁴

24 In other words, MCI would have this Commission use no judgment or data at all for setting the
25 path of rates for the majority of the Companies' services. If MCI wants to avoid contentious
26 proceedings, it could equally achieve that aim by capping "other-than-competitive" service rates
27 not in nominal terms but in real terms, thus indexing such rates to inflation.

28 Note that MCI would also proscribe rate adjustments based on exogenous factors. It ignores
29 the fact that the history of exogenous adjustments have, on average, benefited ratepayers. It

³⁴ Wood, p. 41, lines 43-46.

1 ignores the fact that a competitive market, which price regulation tries to emulate, would pass
2 through the costs of governmental actions. And it ignores the fact that governmental actions can
3 even change the interexchange carriers' costs relative to the Companies' rates, which might give
4 the Companies a competitive edge over its competitors or *vice versa*.

5 Second, Mr. Wood would have the Companies "[s]et the rates for CT&T/Centel's essential
6 monopoly input functions at their direct economic costs."³⁵ As an economist, I agree that this part
7 of the proposal would increase the economic efficiency of the Companies' prices and is a useful
8 long-term vision. He and I would disagree about what the measure of those costs would be, but
9 my main point here is different: economic theory notwithstanding, this element of the MCI
10 proposal ignores the long history of regulatory policy that ensured that residential basic rates were
11 held below cost by pricing other services—such as switched access and toll services—above
12 costs. In the true spirit of expropriation, MCI would tell the Companies' stockholders, contrary to
13 the understanding of decades, that they alone are responsible for continuing the subsidies to
14 residence basic service. Further, MCI ignores the historical tendency of regulatory commissions
15 to set depreciation rates at unrealistically low levels, again to help maintain current rates at low
16 levels. Again, in the true spirit of expropriation, its proposal would deny the Companies an
17 opportunity to recover and earn a return on the difference between the net book value of the
18 Companies' assets and the market value of those assets, caused by the historical
19 underdepreciation. Even an MCI witness in another jurisdiction's proceeding explicitly
20 acknowledged a local exchange carrier's entitlement to such a recovery.³⁶

21

22 VII. SUMMARY

23 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

24 A. I recommend that the Commission approve the Stipulated Price Regulation Plan. It should do so,
25 first, because the Stipulated Plan is broadly in the public interest. It assures that competition will

³⁵ Wood, p. 40, lines 16-17.

³⁶ The witness advocated including "markups over TSLRIC to recover shared economic costs and economic overhead costs (and, where appropriate, an amortization charge to recover costs associated with assets that are over valued due to a regulatorily-imposed requirement)." Charles B. Goldfarb, testimony, Commonwealth of Massachusetts, Docket 94-185, p. 43.

1 succeed in the state when it is economic and efficient and not otherwise. By providing the
2 Companies with rate flexibility, it also increases the likelihood that the benefits of competition
3 will be distributed widely to all classes of customers and all areas of the state. It is also likely to
4 improve the efficiency of telephone service by providing all producers with proper incentives, and
5 it significantly insulates consumers from bearing the risks of investments which may be stranded
6 by the competitive process.

7 In addition to achieving these broad public interest goals, the Stipulated Plan meets the more
8 explicit criteria that the legislature specified for evaluating such plans. The Stipulated Plan
9 assures that basic telephone service will remain affordable and that the Companies will meet
10 reasonable service standards. Finally, the Stipulated Plan provides the Companies with neither
11 the incentive nor the ability unreasonably to prejudice any class of telephone customers.

12
13 Q. DOES THIS COMPLETE YOUR TESTIMONY?

14 A. Yes.

15

16

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Dr. Taylor received a B.A. *magna cum laude* in Economics from Harvard College, an M.A. in Statistics and a Ph.D. in Economics from the University of California at Berkeley. He has taught economics, statistics, and econometrics at Cornell and the Massachusetts Institute of Technology and was a Research Fellow at the Center for Operations Research and Econometrics at the University of Louvain, Belgium.

At NERA, Dr. Taylor heads the Cambridge office and is Director of the Telecommunications Practice. He has worked primarily in the field of telecommunications economics on problems of state and federal regulatory reform, competition policy, economic issues concerning broadband network architectures, quantitative analyses of state and federal price cap and incentive regulation proposals, and antitrust and contract litigation in telecommunications markets. He has applied the economic theories of price squeezes and cross-subsidization to long distance telephone, Centrex, and public telephone markets. In the area of environmental regulation, Dr. Taylor has worked on statistical issues in the measurement of emissions levels from coal-fired electric power generators and municipal waste-to-energy facilities.

He has published extensively in the areas of telecommunications policy related to access and in theoretical and applied econometrics. His articles have appeared in numerous telecommunications industry publications as well as *Econometrica*, the *American Economic Review*, the *International Economic Review*, the *Journal of Econometrics*, *Econometric Reviews*, the *Antitrust Law Journal*, *The Review of Industrial Organization*, and *The Encyclopedia of Statistical Sciences*. He has served as a referee for these journals (and others) and the National Science Foundation and is currently an Associate Editor of the *Journal of Econometrics*.

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